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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/566,194

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Anine Hester Ras

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EXAMINER

TUROCZY, DAVID P

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

03/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/566,194		RAS ET AL.	
	Examiner		Art Unit	
	DAVID TUROCY		1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/30/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 7-8, 14-15, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by ZA 20017995, hereafter ZA '995.

Claim 1: ZA '995 discloses a process for producing a boron coated abrasive, the process including the steps of contacting the abrasive to be coated with a boron source, at a coating temperature of about 800.degree. C. to about 1200.degree. C. in an inert atmosphere, for a time sufficient to coat at least a portion of the abrasive (for examples abstract, Page 5-6).

Claim 2: ZA '995 discloses the abrasive is in the form of abrasive particles, larger abrasive bodies, or abrasive tools (page 5).

Claim 3: ZA'995 discloses boron powder (page 5)

Claims 7-8: These claims are taught by ZA '995 at page 6, see 1000°C as the process temperature, which the examiner maintains is about 1100°C as required by claims 8.

Claim 14: ZA '995 discloses the abrasive and boron source are heated at the coating temperature for at least 30 minutes (Page 6).

Claim 15: ZA '995 discloses the abrasive and boron source are heated at the coating temperature for at least 3 hours (page 6).

Claim 19: ZA '995 discloses the abrasive is diamond or cubic boron nitride (page 4).

3. Claims 1-3, 7-9, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5611828 by Celikkaya, hereafter Celikkaya.

Claim 1: Celikkaya discloses a process for producing a boron coated abrasive, the process including the steps of contacting the abrasive to be coated with a boron source, at a coating temperature of about 800.degree. C. to about 1200.degree. C. in an inert atmosphere, for a time sufficient to coat at least a portion of the abrasive (for examples Column 12-14).

Claim 2: Celikkaya discloses the abrasive is in the form of abrasive particles, larger abrasive bodies, or abrasive tools (examples).

Claim 3: Celikkaya discloses boron powder (column 12, lines 35-45).

Claims 7-9: These claims are taught by Celikkaya at column 13, lines 35-40, as the process temperature, which the examiner maintains is about 1150°C as required by claims 9.

Claims 14-16: Celikkaya discloses about 6 hours, which the examiner maintains reads on at least 6 hours. The term "about" render the prior art inclusive of certain degree of times longer than 6 hours (Column 13, lines 25-35).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over ZA '995.

Claims 7-16: The examiner maintains the position as discussed above with regards to the temperature, additionally, ZA '995 discloses the preheating steps, the heating rates, and the final temperature are all result effective variable that directly effect the coating process (page 6) and therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the process as taught by ZA '995 to optimize the result effective variables, in this case the particular heating steps and rates, using routine experimentation to reap the benefits of the proper film deposition.

Specifically to Claim 10-14: Specifically, ZA '995 discloses preheating to a temperature of 300°C at a rate of 10°C/min, but fails to disclose maintaining at the temperature for 15 to 45 minutes, however, the reference discloses heating slowly thereafter at 10°C/hr and it is the examiners position that it would have been obvious to maintain the temperature for a time period within the range as claimed with a reasonable expectation of predictable results. Additionally, the examiner maintains the

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claims include about language and the examiner maintains 300-310°C over an hour period is "about" 300°C, within the range as claimed.

Specifically to Claims 14-16: ZA '995 discloses the final temperature at a time sufficient to deposit the film, discloses a about 4 hours, however, discloses the time is a result effective variable and optimizing the time through routine experimentation would have been obvious to one of ordinary skill in the art to deposit an appropriate film.

Claims 17-18: ZA '995 does not discloses the range of boron source to abrasive, however, the ratio of coating material to the substrate is a result effective variable. If the ratio is too low, the substrate is insufficiently or improper coated and too high results in thicker or improper coating. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have determined the appropriate amount of boron source, relative to the amount of substrate, through routine experimentation to effectively and efficiently coat the substrate with the desired amount of coating.

6. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Celikkaya in view of US Patent 5090969 by Oki, hereafter Oki and JP 09-142932, hereafter JP '932.

Claim 4: Celikkaya discloses all that is taught above and Celikkaya discloses using any boron source for forming the boron coating, however, the reference fails to disclose boric acid in combination with boron powder. However, Oki discloses coating

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particles with a boron source including boron powder and boron oxide combination and JP '932 discloses boric acid in combination with other boron oxide is known and suitable boron agent in the abrasive formation art and therefore, taking the references collectively it would have been obvious to one of ordinary skill in the art to have modified Celikkaya to include boric acid with the boron powder with a reasonable expectation of successful results of providing a boron coating because Oki discloses boron powder and boron oxide are combined as boron sources and JP '932 discloses boric acid and boron oxide are combined and thus one would expect success in combining boron powder and boric acid.

Claims 5-6: The combination of references fails to disclose the appropriate composition, however, it is the examiners position that the composition of the source material is a result effective variable: directly affecting the quality of the film deposition and the resulting deposited film. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to determine the appropriate amount of each source, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6524357 discloses the deposition temperature and ramp rate are known to require strict control due to the substrate (Column 7, 10)..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID TUROCY whose telephone number is (571)272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David Turocy/
Examiner, Art Unit 1792